

PATENT ABSTRACTS OF JAPAN

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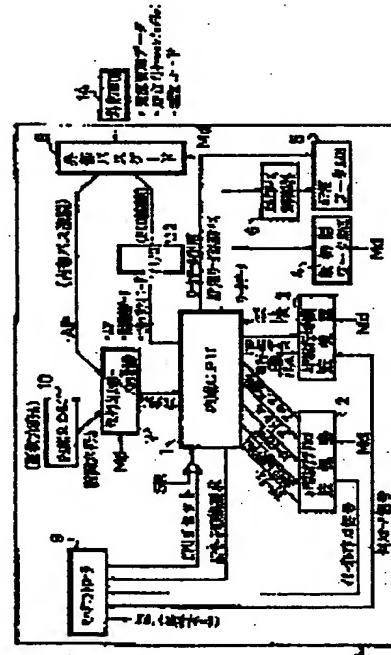
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(54) MICROPROCESSOR FOR GAME MACHINE

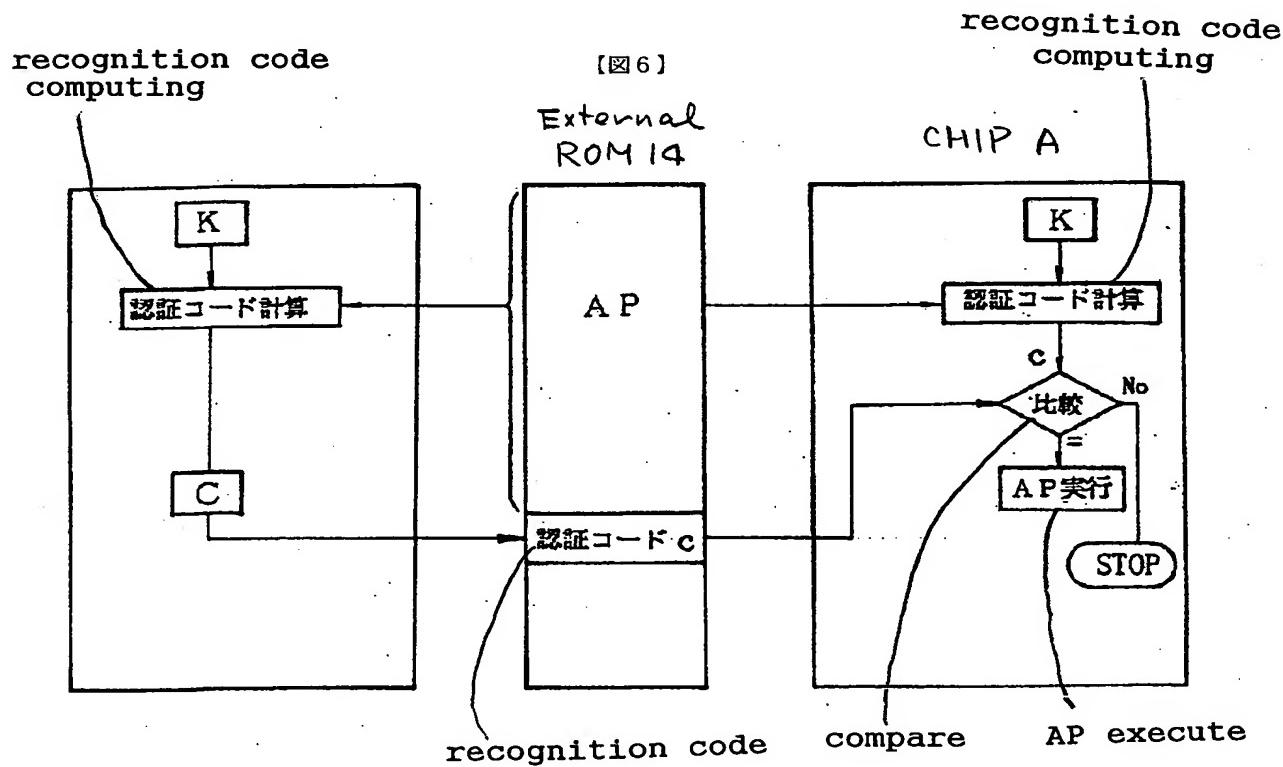
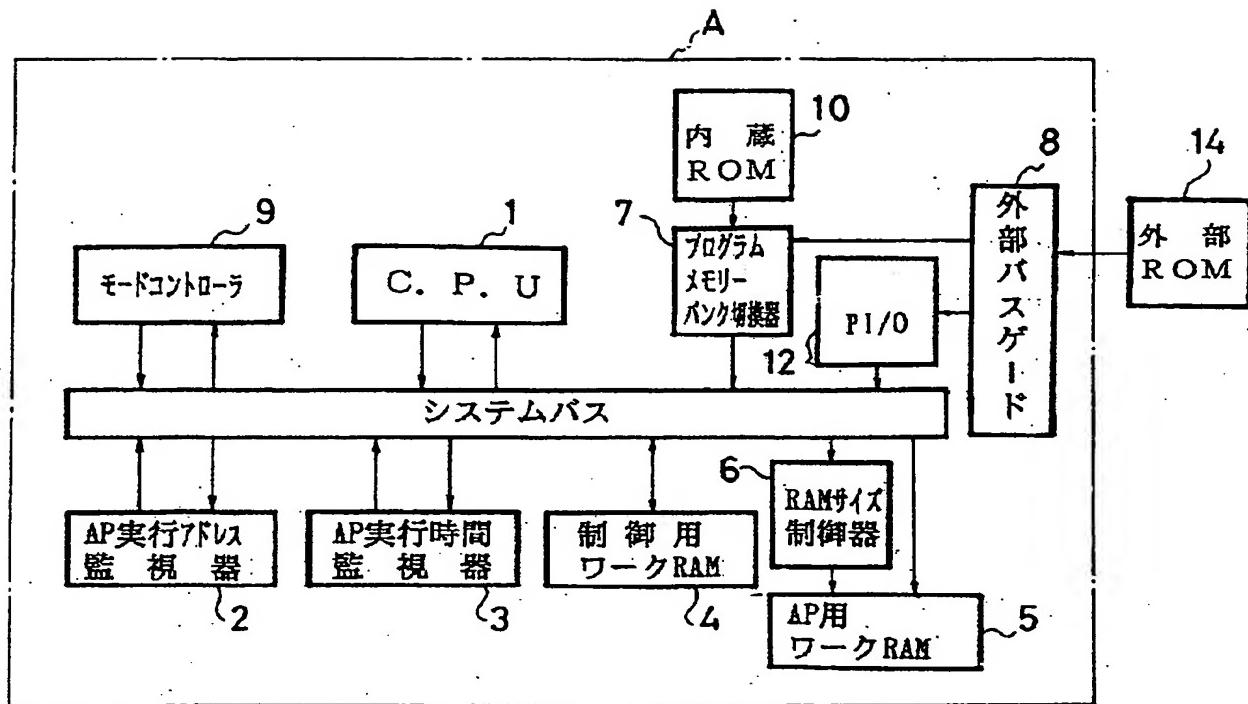
(57)Abstract:

PURPOSE: To prevent the unjust action by giving a recognition code to a program given a type qualification, giving a recognition code to a microprocessor for controlling the machine after reading the above-described recognition code, and starting operation after the accordance of the recognition code is confirmed.

CONSTITUTION: A work RAM 4 for control is put into a usable state by a mode controller 9 according to the instruction supplied from a CPU 1, and a program for stopping the device according to the algorithm for calculating the type recognition code, key code, existence of the recognition code, or the fact that an application program(AP) address region is within a range or not is read into the CPU 1 from a built-in ROM 10. As for this CPU 1, the recognition code is calculated on the basis of the key code, and compared with the recognition code read-in from a user memory means (outside ROM) 14. If each result of the comparison does not accord with each other, the device is made to stop after the execution time of AP lapses over a prescribed time, and when the result of the comparison accords with each other, AP is executed.



【図1】



Supplement to the Patent Abstracts of Japan of Reference 1

The invention relates to finding unjust rewriting of a program for a game machine controlled by a CPU.

Figure 1 illustrates a system of a game machine according to the claimed invention.

There are provided a ROM 10 built in a microcomputer chip A and a ROM 14 outside the chip.

In the external ROM 14 are stored an application program for the game machine and a recognition code associated with the application program, and in the built-in ROM 10 are stored a key code and an algorithm for computing a recognition code based on the application program.

A game is to be made playable by the game machine having the application program loaded on its chip A from the external ROM and having the application program executed, and a check is performed at the time of having the application program loaded as to whether the application program has been unjustly rewritten.

Figure 6 is explanatory of the comprehensive checking operation comprising the steps of:

- (1) Computing a recognition code based on an application program in advance by utilizing a key code K
- (2) Storing in the external ROM the application program and the computed recognition code
- (3) Loading the application program on the chip from the external ROM and simultaneously the recognition code read out of the external ROM is read into the chip
- (4) Computing in the chip a recognition code based on the application program loaded on the chip and by utilizing the key code K and the algorithm for computing a recognition code stored in the built-in ROM, and
- (5) Comparing the recognition code computed in step (4) with the recognition code read into the chip in step (3).

If the two recognition codes agree, it is determined that

there has been no unjust rewriting and the application program is carried out, but, if they do not agree, the execution of the application program is withheld.